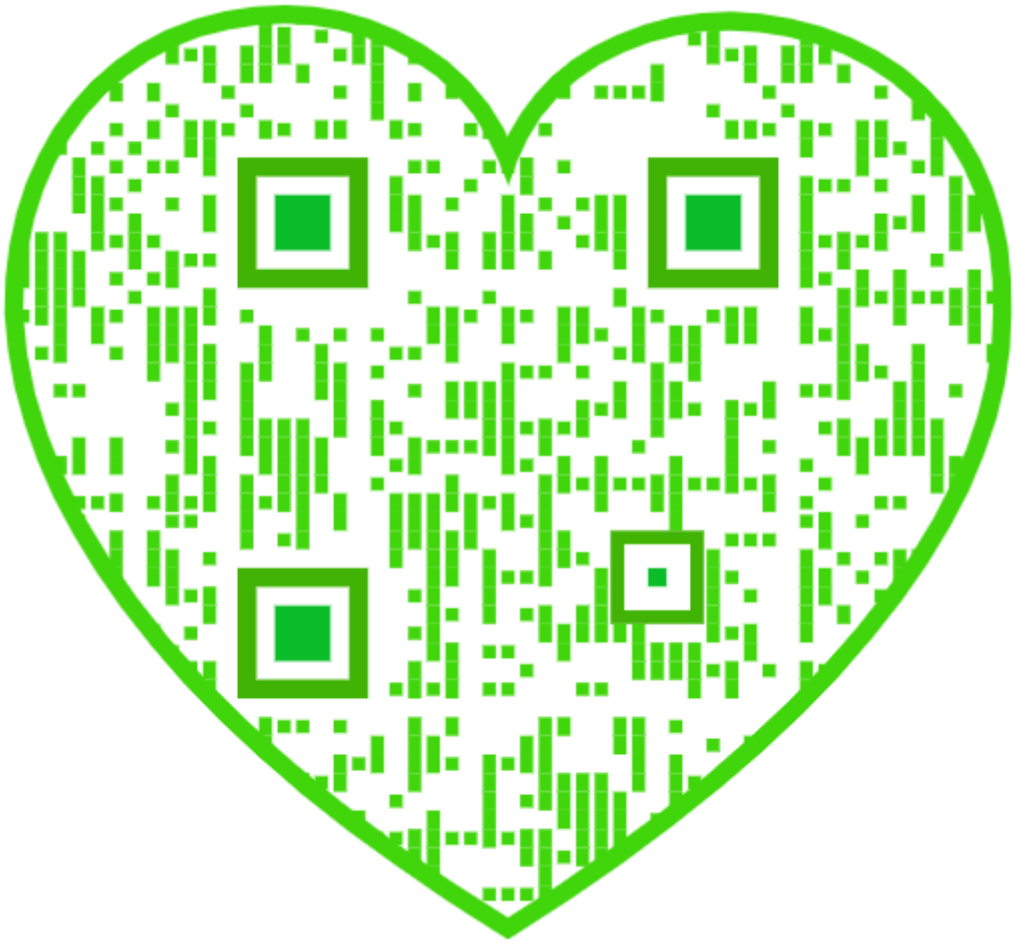
Master in Artificial Intelligence

Algorithm Selection & Development XVI



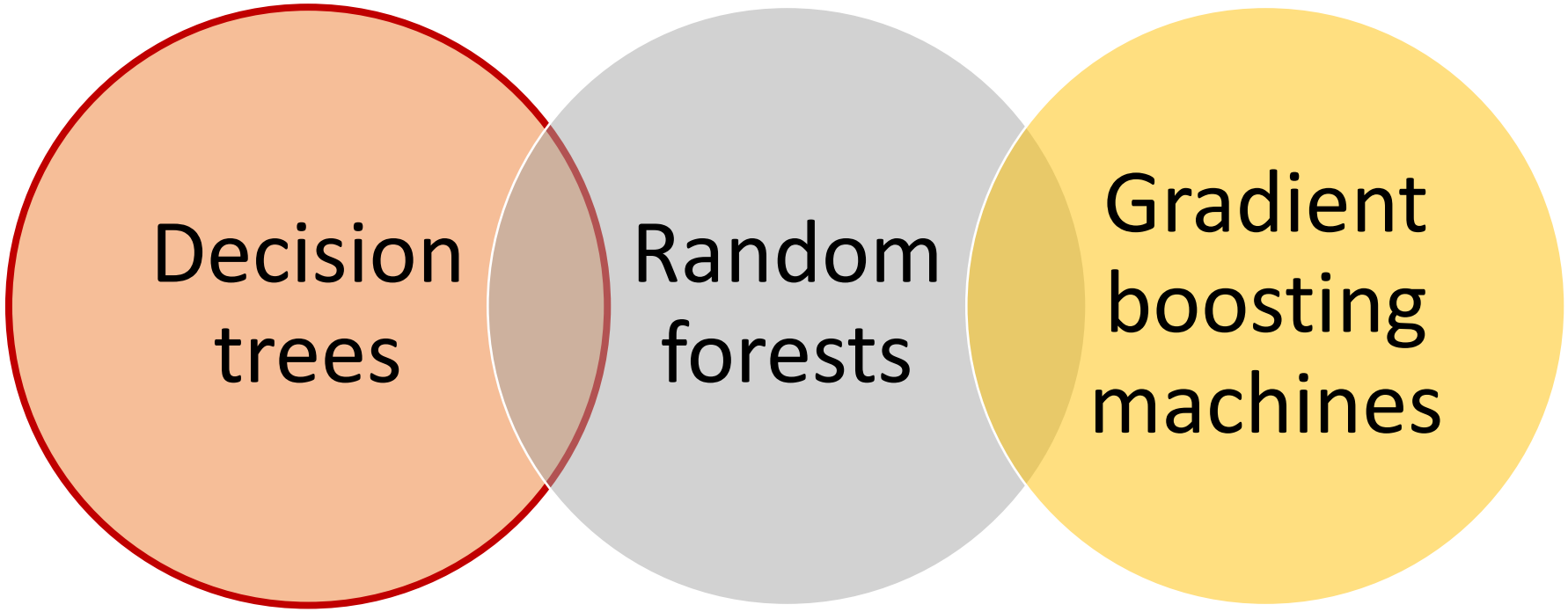
Purpose

The purpose of the section is to help you learn how to research, select, and develop appropriate algorithms to become a Successful Artificial Intelligence (AI) Engineer

At the end of this lecture, you will learn the following

- **How to train Decision trees algorithm for getting feature importance**

How to train Decision trees algorithm for getting feature importance



How to train Decision Trees algorithm for getting feature importance-

```
from sklearn.datasets import load_iris  #
Sample dataset
from sklearn.tree import
DecisionTreeClassifier
```

How to train Decision Trees algorithm for getting feature importance-

Load Dataset:

python

```
# Load sample dataset (you can replace it with your own dataset)
data = load_iris()
X = data.data  # Features
y = data.target  # Target variable
```


Train Decision Tree Model:

```python
# Initialize decision tree classifier
clf = DecisionTreeClassifier()

# Fit the model
clf.fit(X, y)
```

How to train Decision Trees algorithm for getting feature importance-

Get Feature Importance Scores:

python

```python
# Extract feature importances
feature_importances = clf.feature_importances_

# Print or visualize feature importances
for i, importance in enumerate(feature_importances):
    print(f"Feature {i}: {importance}")
```

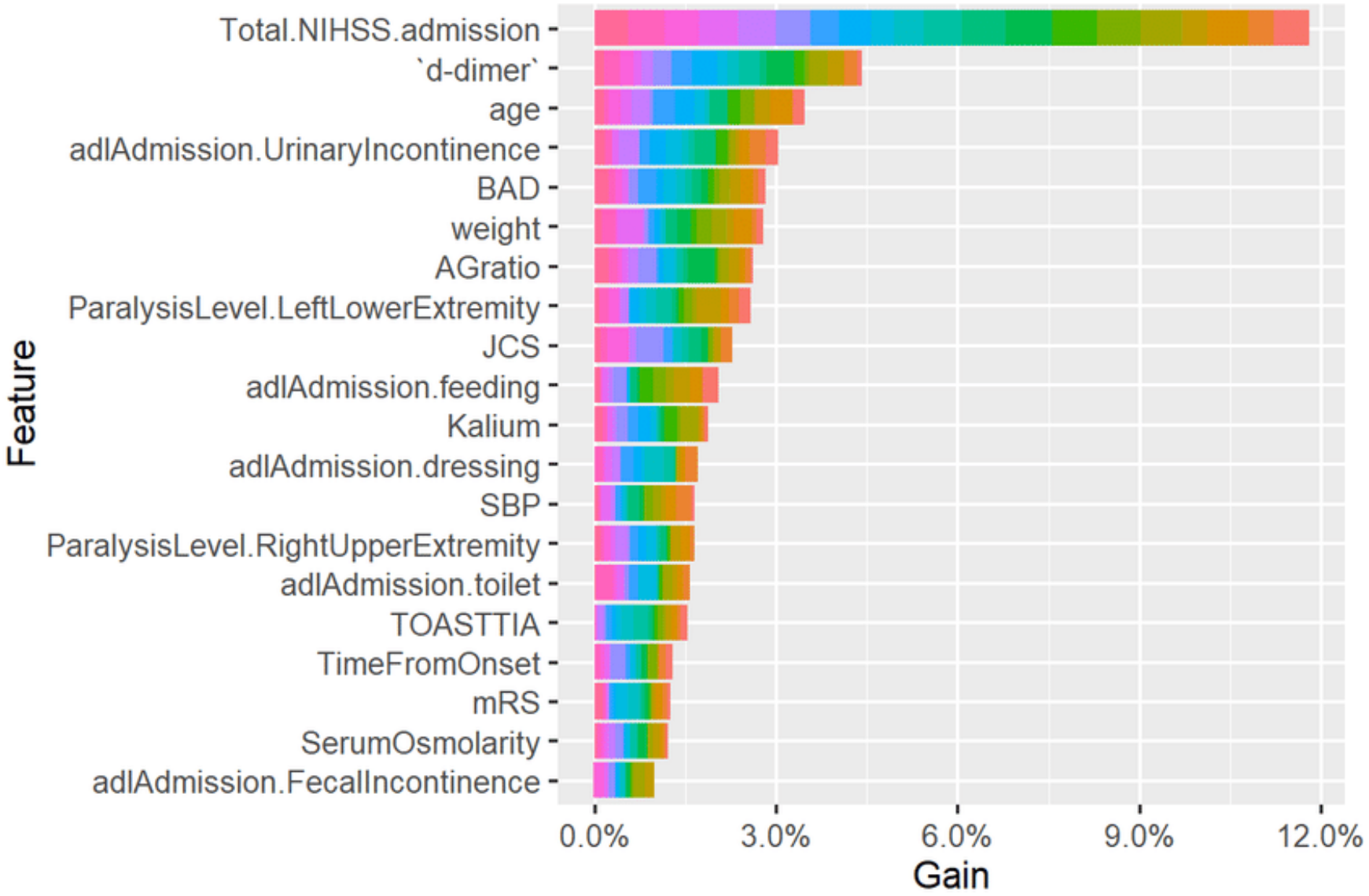
How to train Decision Trees algorithm for getting feature importance-

Optional: Visualize Feature Importance:

python

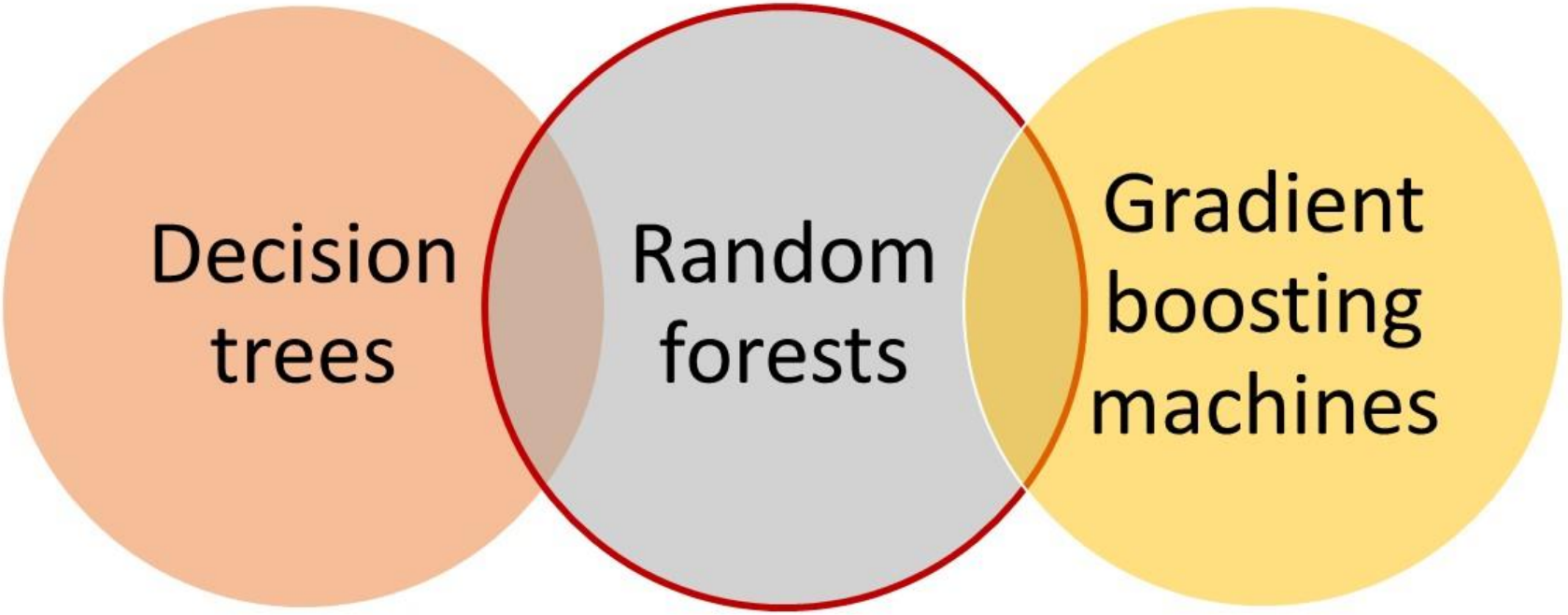
```python
import matplotlib.pyplot as plt

# Plot feature importances
plt.bar(range(len(feature_importances)), feature_importances)
plt.xlabel('Feature Index')
plt.ylabel('Feature Importance')
plt.title('Decision Tree Feature Importance')
plt.show()
```

How to train Decision Trees algorithm for getting feature importance-



What is next?

How to train Random Forests algorithm for getting feature importance



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